English

FLASH lite 1401™

Instruction Manual

Product Description

The Discus Dental FLASH-lite 1401 (see Figure 1) is a revolutionary LED dental curing light utilizing a light emitting diode (LED) for the polymerization of composite materials that contain the photo-initiator camphorquinone (CQ). The incorporation of an advanced LED, micro-controller and a lithium-ion battery enables the FLASH-lite 1401 to be one of the most advanced, portable and powerful LED dental curing lights available today, offering curing power equal to or better than standard halogen curing lights.*

The FLASH-lite 1401 uses the most sophisticated LED technology to provide the required wavelength range (460-480 nanometers) needed to ensure quick, reliable and efficient polymerization of products made with camphorquinone.

The FLASH-lite 1401 is designed to be incredibly powerful yet easy to use. There is no need to memorize elaborate button sequences in order to determine cure times. The FLASH-lite 1401 uses a one-touch operation for on/off and features an audible indicator for curing times at 10 second intervals. The light-weight, ergonomic design, featuring a curved extension, allows for maximum exposure to all areas of the oral cavity for excellent reach and super-efficient curing.

* Study available upon request.

Contents (See Fig. 1)

- AC/DC Wall Plug Adapter
- Charger Base with Built-in Radiometer
- FLASH-lite 1401
- One Replacement Lens Cap
- One Triangular Multi-tiered Hardness Curing Disk
- Instruction Manual

Technical Data

FLASH-lite 1401

Battery: Lithium-Ion 3.6V nominal 1800mAh
Wavelength Range: 460-480 nm
Light Intensity: ≥1100 mW/cm²
Operation: Duty cycle of at least 6 minutes ON 4 minutes OFF
Total Continuous Runtime with Fully Charged Battery: 25 minutes
Dimensions: Diameter: 22 mm (.86 in)
Length: 198 mm (7.8 in)
Weight: 3.8oz

AC/DC Wall Plug Adapter

Input Voltage: 100-240V ~/ 50-50Hz / 400m
Output Voltage: 9V=/1.5A
Output Current: 1500mAh Max
Dimensions: Height: 64.5 mm (2.5 in)
Diameter: 62.7 mm (2.46 in)
Weight: 3.7 oz.

Charger Base with Built-in Radiometer

Time to Charge Discharged Battery: 3 hours
Operating Temperature: 15˚C - 45˚C (55˚F - 104˚F)
Total Height with Handpiece Inserted: 223.5 mm (8.8 in)

Classification: Protection Class II Type B

Safety

1. The FLASH-lite 1401 must be used in strict accordance with the following operating instructions. Discus Dental accepts no liability for any damage resulting from the use of this unit for any other purpose.
2. Prior to start-up of FLASH-lite 1401 make sure that the operating voltage stated on the rating plate is compatible with the available mains voltage. Operation of the unit at a different voltage may damage the unit.
3. Exposure must be restricted to the area of the oral cavity in which clinical treatment is intended.
4. Use only original Discus Dental parts. The use of third party chargers and/or AC/DC wall plug adapters will result in damage of the unit.
5. Do not allow cleaning agents to directly enter the unit as this may cause premature failure. *See Maintenance and Care on page 9.*
6. Only a Discus Dental authorized representative can service the unit. Please call 800-422-9448 for any questions.
7. Do not use on patients with a history of photo biological conditions including urticarial solaris or erythropoetic protoporphyria or who are on photosensitizing medications.
8. Suitable blue-light filtering safety goggles must be worn by patient and dentist during use. Warning: LED Radiation. Avoid Direct Eye Exposure. Class 3R LED Product (IEC60825-1 Edition 1.2, 2001-08). Eye injury can result.

Unpacking / Setup

1. Insure all parts contained within package match the contents list.
2. Remove all pieces from the box.
3. Plug the AC/DC wall plug adapter into the mating connector on the back of the charger base.
4. Plug the AC/DC wall plug adapter connector into your most convenient AC outlet.
5. Place the FLASH-lite 1401 into the charger base. The red light on the charger base will indicate the FLASH-lite 1401 is now charging. (To insure highest level of performance,

allow the FLASH-lite 1401 to fully charge prior to first use. On average, it will take approximately 2-3 hours to initially charge FLASH-lite 1401. Indicator will turn green wl unit is fully charged.

Operation

FLASH-lite 1401 is supplied with the lens cap attached. A simple one-touch on/off button operation has been designed. Simply press the button once to activate and de-activate th light.

FLASH-lite 1401 is equipped with a microprocessor to monitor the functionality of the unit including remaining battery life. FLASH-lite 1401 is equipped with several audible signals including:

- One beep at 10 seconds, Two beeps at 20 seconds, Three beeps at 30 seconds, Four beeps at 40 seconds, Five beeps at 50 seconds, 6 beeps at 60 seconds and will immediately repeat this schedule continously until manual shut-off by user by pressin the power button (no beeps) or by thermal shut down (indicated by 25 consecutive beeps)
- **Three signals** – Extension not present
- **25 short signals** – Is * Overheat alarm.

*** Note:** The FLASH-lite 1401 is programmed to automatically shut off to prevent the unit from overheating. When the external temperature reaches 50˚C, the unit beeps 25 short signals and then shuts off. The FLASH-lite 1401 is designed for a consecutive and repeated use of 6 minutes. If the unit reaches the set temperature of 50˚C, set the unit in the charger to cool off. Once cooled, the unit is ready for normal use.

.ens Cap (See Fig. 2)

'he lens cap should be inspected prior to each use for blemishes, scratches, cracks or foreign ubstances that may impair the optical output of FLASH-lite 1401. It is recommended that lens aps be replaced every 2-4 weeks. To replace, simply unscrew the existing lens cap counter lockwise and replace by turning clockwise. Do not over tighten.

Barrier Sleeve

'o provide optimum protection, we recommend you apply a clean plastic barrier sleeve for ach new patient use. (Item # CR1033)

:ure Times

)ue to the variation in VLC (visible light cured) materials, curing times will differ. Review ıanufacturer product instructions for recommended curing times. If using Matrixx by)iscus Dental, these composite materials perform optimally when cured for approximately 0-40 seconds in 2-3 mm increments. **ALWAYS bench test new materials before use *in vivo*.**

Multi-Tiered Triangular Hardness Disk

he new multi-tiered triangular hardness disk enables you to measure various depths of omposite shades. Each point of the triangle offers a different depth (2, 3 or 4 mm). The iangular disk is made of a plastic material, which mimics the properties of cured omposite. To measure the depth of cure, place the desired amount of composite into the ppropriate tip well of the "cure" side of the triangle. Cure the material for the length of time uggested by the manufacturer. Next, check the hardness of the cured material by scraping ıe "test" side surface with a tungsten carbide instrument. Measure its hardness against that f the surrounding surface of the disk. The surface of the cured material should feel equal to r harder than that of the disk material. The disk has a Barcol hardness of 75 +/- 5 and epresents a complete cure.

Note: If the cured composite material is softer than the surrounding disk surface, this may be the result of insufficient light output or compromised composite material. In order to verify light output, make sure the unit is fully charged and test intensity on the built-in radiometer on the FLASH-lite 1401 charger base. Also review the manufacturer's instructions for composite material.

Charger with Built in Radiometer (See Fig. 3)
The FLASH-lite 1401 charger is designed to maintain a peak level of curing performance. To charge, place the FLASH-lite 1401 into the charger base contact side down. The light indicator (see diagram) on the charger base will provide you with the information needed:

- Red Light – Unit is charging
- Green Light – Unit is 100% Charged
- Flashing Red Light – **Unit is damaged. Please contact Discus Dental Customer Service at 800-422-9448 and +1-310-845-8260 outside the U.S.**

Note: After initially fully charging the battery, FLASH-lite 1401 can be used at any time during the charging process, even if the light is indicating a charging status (solid red light). Maximum performance will be achieved when battery is 100% charged.

For optimal performance place FLASH-lite 1401 back in charger base when not in use.

Measuring Output Intensity (See Fig. 4)
The light intensity (≥1100mW/cm²) can be measured for accuracy using the light indicator built into the charging base. To measure the intensity of the light being emitted from the unit, place the lens tip directly onto the black aperture located on the charger base. Holding the FLASH-lite 1401 directly onto the aperture, activate the FLASH-lite 1401 by pressing the blue on/off button. Built within the charger base are 4 red indicator lights. The indicator lights are

not visible until the FLASH-lite 1401 tip has been placed on the aperture and the FLASH-lite 1401 turned on. The number of indicator lights that illuminate will identify the output of the light:

- **4 lights**: **100%** of the light intensity available
- **3 lights**: **80%** of the light intensity available
- **2 lights**: **60%** of the light intensity available
- **1 light**: **40%** of the light intensity available

The light intensity can be accurately determined only with the charger of the FLASH-lite 1401. Do not use portable and/or handheld radiometers to measure the light intensity output of FLASH-lite 1401 as these types of radiometers have been shown to have variability in accuracy and precision in measuring total spectral output. To measure output intensity of your FLASH-lite 1401, only use the provided charger. **Always bench test new materials before use *in vivo*.**

Maintenance and Care

The FLASH-lite 1401 should be cleaned with the curing extension attached and replaceable lens cap in place. Spray disinfectant on cloth to wipe down unit.

Recommended disinfecting agent: ≤ 3.4% gluderaldehyde solution.

Note: **DO NOT spray disinfecting agent directly onto FLASH-lite 1401 or immerse unit in disinfectant solution. DO NOT autoclave FLASH-lite 1401.** Do not use phenolic based disinfectants or alcohol to disinfect as this will have a detrimental effect on the performance of FLASH-lite 1401. Discus Dental will not be responsible for units that have been disinfected with these products. Please call Discus Dental Customer Service at 800-422-9448 and +1-310-845-8260 outside of the U.S. for all other acceptable cleaning supplies.

Transport and Storage

Ambient Temperature	4F to 104F (-20C to 40C)
Relative Humidity	10% to 90%
Atmospheric Pressure	.5atm to 1.0atm (500hPa to 1060hPa)

Warranty

Discus Dental warranties your FLASH-lite 1401 against defects in material and workmanship for 12 months from date of purchase with proper usage. During that twelve-month warranty period, Discus Dental will repair or replace a defective unit.

Please call Discus Dental Customer Service for any additional questions, comments or product information: 800-422-9448 and +1-310-845-8260 outside of the U.S.

Defects caused by misuse, neglect, accident, or abuse are not covered by this warranty.

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